In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

1-7. (Cancelled)

8. (Currently amended) A method of assaying a biological or chemical sample, which comprises:

placing said sample in a chamber having transparent sides;

illuminating the sample using a light beam coming from a source;

producing an image of the light beam diffused by the sample, wherein said image comprise an illuminated volume zone, a light beam point of entry zone, a light beam point of exit zone, a meniscus zone, and an artefact zone;

recording the spatial structure of the image;

examining the spatial structure of the image and distribution of light energy in the image with respect to one or more references, measuring noises which are created by the sample analysis and defining one or more regions of interest so that measuring information can be extracted;

extracting the measuring information, wherein the extracted information is specific to the interaction of the light beam with the sample;

recording the measuring information; and

calculating the assay with respect to the measuring information.

9. (Previously presented) A method as recited in claim 8, wherein the diffusion is Raman scattering, fluorescence scattering, molecular diffusion or particle scattering.

10. (Previously presented) A method as recited in claim 8, wherein the assay is calculated with respect to a calibration between the light energy measurement and the sample concentration or amount.

11. (Previously presented) A method as recited in claim 8, wherein the assay is calculated with respect to an analysis of the kinetics of the biological or chemical reaction.

12. (Currently Amended) A method as recited in claim 8, wherein a first zone of interest around the illuminated volume zone, which corresponds to the volume of the chamber excited by the light beam, and a second region of interest next to this first region are defined, and wherein the measuring information is obtained by subtracting the sum of the signals of all of the pixels of the first region of interest from the sum of the signals of all of the pixels of the second region of interest.

13. (Previously presented) A method as recited in claim 8, further comprising deriving the concentration of fluorescent molecules contained in a solution.